What is Claimed:

1. A linear translation device comprising:

a frame;

a carriage pivotally coupled to the frame;

a drive arm body coupled to the carriage and rotatably coupled to the frame; and

an actuator coupled to the drive arm body and the frame to effect rotation of the drive arm body about a pivot point;

wherein a linear motion of the carriage is achieved upon rotation of the drive arm body by the actuator about the pivot point.

2. The device of claim 1, wherein the carriage is coupled to the frame via flexures that pivot with respect to the frame in response to rotation of the drive arm body.

3. The device of claim 2, wherein the flexures are in substantially parallel alignment with each other and remain in substantially parallel alignment as the flexures pivot with respect to the frame.

4. The device of claim 1, wherein the drive arm body is rotatably coupled to the frame via a pivot link comprising at least one flexure that flexes during rotation of the drive arm body.

5. The device of claim 4, wherein the at least one flexure of the pivot link includes first and second flexures that intersect and are substantially perpendicular to each other, each flexure of the pivot link being secured at one flexure end to the drive arm body and at another flexure end to the frame such that the pivot point is located at an intersection point of the first and second flexures.

6. The device of claim 1, wherein the drive arm body is coupled to the carriage via a drive link comprising a flexure that flexes when the drive arm body is rotated by the actuator.

7. The device of claim 6, wherein the drive link includes at least one narrowed section that separates the drive link into two portions, with each portion being independently pivotable with respect to the other portion.

8. The device of claim 1, wherein the actuator comprises a voice coil actuator.

9. The device of claim 8, wherein the voice coil actuator includes a magnet housing secured to the drive arm body and a coil member secured to the frame.

10. The device of claim 1, wherein each of the frame, carriage and drive arm are coupled to each other via flexures.

11. The device of claim 1, wherein the carriage includes a support to connect an object to the carriage such that linear motion is conveyed to the object by the carriage in response to rotation of the drive arm body by the actuator about the pivot point.

12. The device of claim 1, wherein the object comprises an optical component.

13. An optical instrument comprising the linear translation device of claim 12.

14. An interferometer comprising the linear translation device of claim 12.

15. A method of moving an object in a substantially linear direction utilizing a linear translation device, the linear translation device including a frame, a carriage pivotally coupled to the frame, a drive arm body coupled to the carriage and rotatably coupled to the frame, and an actuator coupled to the drive arm body and the frame, the method comprising:

(a) securing the object to the carriage;

(b) rotating the drive arm body about a pivot point with respect to the frame via the actuator; and

(c) facilitating a linear movement of the carriage and the object connected to the carriage in response to rotation of the drive arm body about the pivot point.

16. The method of claim 15, wherein the carriage is pivotally coupled to the frame via flexures that are in substantially parallel alignment with each other, and (c) includes:

(c.1) facilitating pivotal movement of the flexures with respect to the frame in response to rotation of the drive arm body about the pivot point.

17. The method of claim 16, wherein the flexures maintain their substantially parallel alignment with each other during their pivotal movement.

18. The method of claim 15, wherein the drive arm body is rotatably coupled to the frame via a pivot link including at least one flexure that flexes during rotation of the drive arm body.

19. The method of claim 18, wherein the at least one flexure of the pivot link includes first and second flexures that intersect and are substantially perpendicular to each other, each flexure of the pivot link being secured at one flexure end to the drive arm body and at another flexure end to the frame such that the pivot point is located at an intersection point of the first and second flexures.

20. The method of claim 15, wherein the drive arm body is coupled to the carriage via a drive link comprising a flexure, and (c) includes:

(c.1) flexing the flexure of the drive link during rotation of the drive arm body.

21. The method of claim 20, wherein the drive link includes at least one narrowed section that separates the drive link into a first portion and a second portion, and the method further comprises:

(d) facilitating independent pivotal movements of at least one of the first and second portions of the drive link with respect to the other of the first and second portions at the narrowed section to substantially limit movements of the carriage and object secured to the carriage to linear movements with respect to a single axis.

22. The method of claim 15, wherein the actuator comprises a voice coil actuator including a magnet housing secured to the drive arm body and a coil member secured to the frame, and (b) includes:

(b.1) applying a current to the coil member to achieve a selected degree of rotation of the drive arm body about the pivot point with respect to the frame.

23. The method of claim 15, wherein each of the frame, carriage and drive arm are coupled to each other via flexures.

24. The method of claim 15, wherein the object comprises an optical component.

25. The method of claim 24, wherein the linear translation device forms at least a part of an optical instrument.

26. The method of claim 25, wherein the optical instrument is an interferometer.

27. A linear translation device for transferring a linear motion to an object comprising:

a frame;

a means for supporting the object, the means for supporting being pivotally coupled to the frame;

a means for driving the means for supporting, the means for driving being rotatably coupled to the frame; and

a means for actuating the means for driving by selectively rotating the means for driving about a pivot point with respect to frame;

wherein a linear motion of the means for supporting is achieved upon rotation about the pivot point of the means for driving.